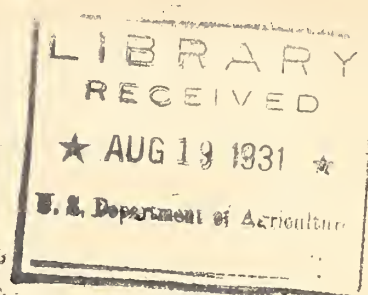
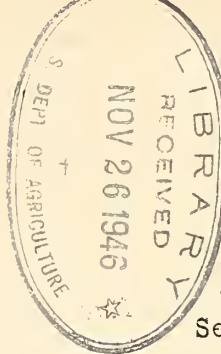


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Excerpt from a radio talk by  
W. W. Vincent, chief, western district,  
Food and Drug Administration, U. S.  
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## HOW TO READ THE LABEL

### Food Fads & Nutrition

All generations have had their faddists, religious, social, economic. Apparently it is human nature to follow fads. The food faddists probably outrank all others in numbers and vociferousness. We have raw meat eaters, fat eaters, vegetarians, and nut eaters, whole wheat bread and bran bread eaters; and in addition those who don't eat for quite lengthy periods. Every health food store is a monument to the food faddist.

Satisfactory dietary systems have been evolved for individuals, in some instances,--- but not for classes. Our occupations are too varied. Our habits differ.

You will remember the calorie-counting system in vogue a few years ago. A calorie, you know, is a unit of heat, and as applied to food, represents food value. I believe everyone should know what a food calorie is. A small calorie is that unit quantity of heat required to raise the temperature of one gram of water by one degree Centigrade. One thousand small calories equal one large calorie--- that is the amount of heat required to raise the temperature of one kilogram (2.2 pounds) of water, one degree Centigrade. Expressed in more familiar terms it is the heat necessary to raise one pound of water 4 degrees Fahrenheit.

That is the food calorie to which you see frequent reference.

To determine calories, scientists use a bomb calorimeter, a hollow chamber immersed in water. They burn a weighed amount of food material in this chamber. They measure the increase in temperature of surrounding water, and then compute the calories. The burning of food in the calorimeter is identical with what takes place in your body as food is assimilated.

The proteins, the carbohydrates and fats, all have a definite caloric value. As fuel for your bodily activities, one gram of carbohydrates is worth about four calories, while one gram of protein likewise yields four calories. A gram of fat yields about 9-3/10 calories. As fuel, one gram of fat is equivalent to a little over 2-1/4 times the same amount of carbohydrate. Before discussing them further I should tell you what the proteins, the fats and carbohydrates are, and what the chemist does when he determines them.

Let's start with the fats. What the chemist actually determines is not fat alone. It is the material soluble in ether. That includes several other substances as well as the true fats. True fats are chemical compounds of the fatty acids and glycerin. In the diet, they furnish you fuel and store energy. Also, certain of the vitamins occur principally in fatty foods.

Now for the proteins. That is the term which roughly designates a group of complex chemical compounds containing nitrogen in a characteristic combination. They contain carbon, hydrogen, nitrogen, sulphur and oxygen; and in addition some contain iron and phosphorus. The nitrogen content of the proteins is fairly uniform--- approximately 16%. Therefore, the chemist determines the percentage of nitrogen in the food and, multiplying by 6-1/4 reports to you the result as protein. Proteins vary considerably in composition, depending upon their source. Proteins are made up of amino acids, of which there are about 20, and it has been proved that four of them are absolutely indispensable to human life and furthermore, that they are not found in adequate amounts in all proteins. They are tryptophane, cystine, lysine and histidine. The absence of any one results in starvation and death, no matter how much other food may be consumed. However, our diets are made up of food from so many sources that there is no danger of amino acid deficiency. The function of proteins is to build new and repair old tissue.

Carbohydrates include the sugars, starches, dextrans, gums and glycogens. All are substances that can be converted to simple sugars by what we term hydrolysis. Their function in the diet is similar to that of fat. They serve to furnish fuel and when converted into fat are stored by the body as excess weight or for future use. Scientific researches show certain reactions between carbohydrates and the fats which indicate the need of both in the diet.

The mineral salts are important. You need them. Bone, blood and tissue repair depend on their presence. Among the most important elements needed are calcium, iodine, phosphorus, copper, magnesium, sodium, potassium, sulphur and chlorine. You won't need to worry about failure to get an adequate supply of mineral salts if you eat a well rounded diet. I will qualify that in one regard. There are localities where it has been found necessary to add some iodine to the drinking water due to lack of that element in both the water and food supply of those areas. Iodine is necessary to the proper functioning of your thyroid gland. Salt manufacturers add iodine to some table salts for the purpose of compensating for any deficiency in the consumer's locality. Your food authorities discourage any self-medication of goiter by the addition of iodine to the foods prepared at home by the individual. Sea foods are a good source of iodine.

Next comes the vitamins. I told you about them in my 40th talk. They are those invisible food accessories essential to growth and the maintenance of good health. My "Read-the-Label" information tells you how to get an adequate supply.

Next is our lesson on nutrition -- cellulose; the structural material of foods. It constitutes the bulk or roughage in what we consume. The chemist calls it crude fibre. It represents material not dissolved by dilute acids and alkalies. The term "bulky foods" means those high in cellulose content or having a high crude fibre. A diet containing fair amounts of cellulose or roughage is not absolutely necessary but is highly desirable.

Assuming that I have given you the facts with reference to the necessary food constituents, what is the next question? How much of those materials does a healthy person need?

Let's assume the average man at 150 lbs. The experts tell us that for proper nutrition he needs 3-1/2 ozs. of protein per day; 17-1/2 ozs. of

carbohydrates, and 3-1/2 ozs. of fat. The average woman, weighing 5/6ths as much as the average man, will need 5/6ths of the amounts given. Actively growing lads may exceed the figures quoted, and men engaged in heavy labor may need 30% more. The experts on nutrition do not recommend that you try to get your proteins, your carbohydrates or your fats from one source. Recall, I indicated the proteins were of varying composition. Some are of more value than others. For example, the famous scientist McCollum indicates as foods containing protein of unusual value milk, liver and kidney; whereas all meats, fish, fowl, eggs, cheese and nuts contain proteins.

Likewise with carbohydrates. You would not exclude your vegetables and cereal products and depend on sugar alone for carbohydrate supplies. The experts indicate that sugar should constitute not more than 1/3 of your carbohydrate intake. Your fruits, cereals and vegetables are the sources from which you secure adequate carbohydrates.

For fat you know the sources--- vegetable and olive oils are practically 100% fat; your butter, 80%; your milk about 3-1/4 to 3-1/2 per cent; your cream about 20%; chocolate and nuts about 50%. Only two fruits contribute naturally to your fat intake--- olives and avocado pears.

My friends, I shan't go further in this talk on nutrition. I can't tell you whether whole wheat or bran bread would be better for you than white bread. If you need roughage in your diet you may eat some bran or whole wheat bread. But remember that whole wheat or bran bread may only serve to irritate your weak stomach, or your child's upset digestive system.

Folks, if I can't tell you, can some food faddists no more familiar with your condition than I am tell you? I can't escape the conclusion that people in a reasonably normal state of health are wasting their time and energy when they worry about diets. If they will see to it that their meals are reasonably varied in kind, and if they will avoid over indulgence, they can forget the food faddists.

